

Appendix IV

DWQ Water Quality Monitoring Programs in the French Broad River Basin

DWQ Water Quality Monitoring Programs in the French Broad River Basin

Staff in the Environmental Sciences Branch (ESB) and Regional Offices of DWQ collect a variety of biological, chemical and physical data. The following discussion contains a brief introduction to each program, followed by a summary of water quality data in the French Broad River basin for that program. For more detailed information on sampling and assessment of streams in this basin, refer to the *Basinwide Assessment Report* for the French Broad River basin, available from the Environmental Sciences Branch website at <http://www.esb.enr.state.nc.us/bar.html> or by calling (919) 733-9960.

DWQ monitoring programs for the French Broad River Basin include:

- Benthic Macroinvertebrates
- Fish Assessments
- Aquatic Toxicity Monitoring
- Lake Assessment
- Ambient Monitoring System

Benthic Macroinvertebrate Monitoring

Benthic macroinvertebrates, or benthos, are organisms that live in and on the bottom substrates of rivers and streams. These organisms are primarily aquatic insect larvae. The use of benthos data has proven to be a reliable monitoring tool, as benthic macroinvertebrates are sensitive to subtle changes in water quality. Since macroinvertebrates have life cycles of six months to over one year, the effects of short-term pollution (such as a spill) will generally not be overcome until the following generation appears. The benthic community also integrates the effects of a wide array of potential pollutant mixtures.

Criteria have been developed to assign a bioclassification to each benthic sample based on the number of different species present in the pollution intolerant groups of Ephemeroptera (Mayflies), Plecoptera (Stoneflies) and Trichoptera (Caddisflies), commonly referred to as EPTs. A Biotic Index (BI) value gives an indication of overall community pollution tolerance. Different benthic macroinvertebrate criteria have been developed for different ecoregions (mountains, piedmont, coastal plain and swamp) within North Carolina and bioclassifications fall into five categories: Excellent, Good, Good-Fair, Fair and Poor.

Overview of Benthic Macroinvertebrate Data

There were 57 benthic samples collected during this assessment period. The following table lists the total bioclassifications (by subbasin) for all benthos sites in the French Broad River basin. Benthos sampling may slightly overestimate the proportion of Fair, Poor and Severe stress sites, as DWQ special studies often have the greatest sampling intensity (number of sites/stream) in areas where it is believed that water quality problems exist. Many streams also ceased flowing during the summer drought of 2002. For detailed information regarding the samples collected during this assessment period, refer to the tables at the end of this appendix.

Summary of Bioclassifications for All Freshwater Benthic Macroinvertebrate Sites (using the most recent rating for each site) in the French Broad River Basin

Subbasin	Excellent	Good	Good-Fair	Fair	Poor	Not Rated	Total
04-03-01	4	1	1	0	0		6
04-03-02	0	3	4	6	1		14
04-03-03	2	1	2	0	0		5
04-03-04	3	3	3	0	0		9
04-03-05	5	3	5	0	1		14
04-03-06	3	3	0	1	0		7
04-03-07	2	0	0	0	0		2
Total (#)	19	14	15	7	2		57
Total (%)	33.3	24.6	26.3	12.3	3.5		100

Assessing Benthic Macroinvertebrate Communities in Small Streams

The benthic macroinvertebrate community of small streams is naturally less diverse than the streams used to develop the current criteria for flowing freshwater streams. The benthic macroinvertebrate database is being evaluated and a study to systematically look at small reference streams in different ecoregions is being developed with the goal of finding a way to evaluate water quality conditions in such small streams.

Presently, a designation of Not Impaired may be used for flowing waters that are too small to be assigned a bioclassification (less than 4 meters in width) but meet the criteria for a Good-Fair or higher bioclassification using the standard qualitative and EPT criteria. This designation will translate into a use support rating of Supporting. However, DWQ will use the monitoring information from small streams to identify potential impacts to small streams even in cases when a use support rating cannot be assigned.

DWQ will use this monitoring information to identify potential impacts to these waters even though a use support rating is not assigned. DWQ will continue to develop criteria to assess water quality in small streams.

Fish Assessments

Historical studies of fish communities in the French Broad River basin were conducted primarily by the North Carolina Wildlife Resources Commission (NCWRC) in the 1960s and late 1970s. Several streams were sampled by DWQ during the past basinwide planning cycle (1994), and two samples were collected in 1999. Scores are assigned to these samples using the North Carolina Index of Biotic Integrity (NCIBI). The NCIBI uses a cumulative assessment of twelve parameters or metrics. Each metric is designed to contribute unique information to the overall assessment. The scores for all metrics are then summed to obtain the overall NCIBI score.

Overview of Fish Community Data

Fish community samples have been collected at 22 sites in the French Broad River basin during this assessment period. The following table lists the most recent ratings since 1990, by subbasin, for all fish community sites. For detailed information regarding the samples collected during this assessment period, refer to the tables at the end of this Appendix.

Summary of NCIBI Categories for All Freshwater Fish Community Sites (using the most recent rating for each site) in the French Broad River Basin

Subbasin	Excellent	Good	Good-Fair	Fair	Poor	Not Rated	Total
04-03-01	0	1	1	0	0		2
04-03-02	0	8	1	0	2		11
04-03-03	0	1	0	0	0		1
04-03-04	2	0	1	0	0		3
04-03-05	0	0	1	1	1		3
04-03-06	1	0	0	1	0		2
04-03-07	0	1	0	0	0		1
Total (#)	3	11	4	2	3		23
Total (%)	13.0	47.8	17.4	8.7	13.0		100.0

French Broad River Basin Fish Kills

DWQ has systematically tracked reported fish kill events across the state since 1996. From September 1, 1997 to August 31, 2002, DWQ field investigators reported 5 fish kill events in the French Broad River basin.

Total fish mortality was relatively low in this basin, as all fish kills were caused by an identified event. The largest fish kill event in the basin occurred in 1998 when rapid draining of Lake Junaluska for maintenance work caused a kill of 50,000 bass, sunfish, carp, catfish and goldfish. The rapid drop in the lake level caused silt suspension and decreased levels of dissolved oxygen (DO) and resulted in a kill below the dam in Richland Creek. For more information on fish kills in North Carolina, refer to <http://www.esb.enr.state.nc.us/Fishkill/fishkillmain.htm>

Overview of Fish Tissue Sampling

There is only one site where fish tissue sampling is conducted in the French Broad River basin. Blue Ridge Paper Products, Inc. (formerly Champion International Corporation) and Progress Energy (formerly Carolina Power & Light Company) perform annual monitoring of fish tissue for dioxins in the Pigeon River watershed including Walters Lake as a requirement of their NPDES permit and FERC license. The purpose of this long-term monitoring program is to determine if concentrations of dioxin (TCDD) and furan in several fish species would decline after the implementation in 1989 of the dioxin reduction program at Blue Ridge Paper's bleached Kraft pulp and paper mill. The mill is located on the Pigeon River in the Town of

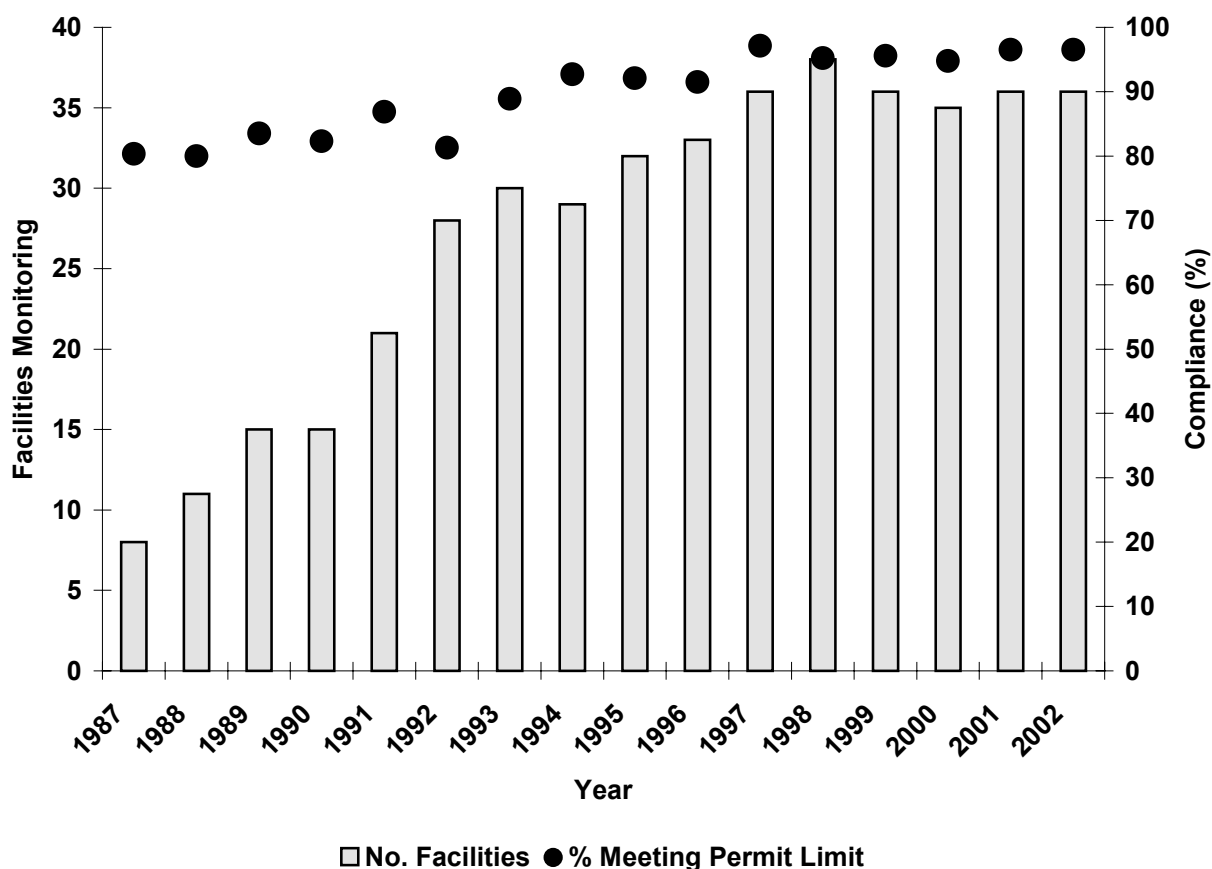
Canton, 20.7 miles upstream of Walters Lake. Common carp still exceed the North Carolina Department of Health and Human Services value of 4.0 ppt in issuing fish consumption advisories. There is still a state issued consumption advisory on common carp in the Pigeon River between Canton and the North Carolina-Tennessee state line. Monitoring of common carp will continue until the advisory is lifted. More detailed information regarding this advisory can be found in subbasin 04-03-05 (Chapter 5).

Aquatic Toxicity Monitoring

Acute and/or chronic toxicity tests are used to determine toxicity of discharges to sensitive aquatic species (usually fathead minnows or the water flea, *Ceriodaphnia dubia*). Results of these tests have been shown by several researchers to be predictive of discharge effects on receiving stream populations. Many facilities are required to monitor whole effluent toxicity (WET) by their NPDES permit or by administrative letter. Other facilities may also be tested by DWQ's Aquatic Toxicology Unit (ATU). Per Section 106 of the Clean Water Act, the ATU is required to test at least 10 percent of the major discharging facilities over the course of the federal fiscal year (FFY). However, it is ATU's target to test 20 percent of the major dischargers in the FFY. This means that each major facility would get evaluated over the course of their five-year permit. There are no requirements or targets for minor dischargers.

The ATU maintains a compliance summary for all facilities required to perform tests and provides monthly updates of this information to regional offices and DWQ administration. Ambient toxicity tests can be used to evaluate stream water quality relative to other stream sites and/or a point source discharge.

Forty-three NPDES permits in the French Broad River basin currently require WET testing. Thirty-seven permits have a WET limit; the other six facilities permits specify monitoring but do not have a limit. Across the state, the number of facilities required to perform WET has increased steadily since 1987, the first year that WET limits were written into permits in North Carolina. Consequently, compliance rates have also risen. Since 1996, the compliance rate has stabilized at approximately 90 percent. The following graph summarizes WET monitoring compliance in the French Broad River basin from 1987 to 2002. Facilities with toxicity problems during the most recent two-year review period are discussed in subbasin chapters.



Lakes Assessment Program

Six lakes in the French Broad River basin (Lake Julian, Burnett Reservoir, Lake Kenilworth, Allen Creek Reservoir, Lake Junaluska and Walters Lake) were sampled as part of the Lakes Assessment Program in summer of 2002. Lakes with noted water quality impacts are discussed in the appropriate subbasin chapter.

Ambient Monitoring System

The Ambient Monitoring System (AMS) is a network of stream, lake and estuarine stations strategically located for the collections of physical and chemical water quality data. North Carolina has more than 378 water chemistry monitoring stations statewide, including 25 stations in the French Broad River basin. Between 23 and 32 parameters are collected monthly at each station. The locations of these stations are listed in the following table and shown on individual subbasin maps. Notable ambient water quality parameters are discussed in the subbasin chapters. Refer to *2003 French Broad River Basinwide Assessment Report* at <http://www.esb.enr.state.nc.us/bar.html> for more detailed analysis of ambient water quality monitoring data.

Locations of Ambient Monitoring Stations in the French Broad River Basin by Subbasin

Subbasin/ Map Code	Station Number	Waterbody/ Location	County	Class
04-03-01				
	E0150000	French Broad R at NC 178 at Rosman	Transylvania	B Tr
	E1130000	Little R near Cedar	Transylvania	C Tr
	E1270000	French Broad R at SR 1503 at Blantyre	Transylvania	WS-IV & B
04-03-02				
	E2120000	Mud Cr at SR 1508 near Balfour	Henderson	C
	E2730000	French Broad R at SR 3495 near Skyland	Buncombe	B
	E3520000	Hominy Cr at SR 3413 near Asheville	Buncombe	C
	E4030000	Beetree Cr near Swannanoa	Buncombe	WS-I HQW
	E4170000	Swannanoa R at NC 25 at Asheville	Buncombe	C
	E4280000	French Broad R at SR 1348 at Asheville	Buncombe	B
	E4770000	French Broad R at SR 1634 at Alexander	Buncombe	B
04-03-03				
	E0850000	Davidson R at US 64 near Brevard	Transylvania	WS-V & B Tr
	E1490000	Mills R at End of SR 1337 near Mills River	Henderson	WS-II Tr HQW
04-03-04				
	E5120000	French Broad R at Blennerhassett Island at Marshall	Madison	B
04-03-05				
	E5410000	W Fk Pigeon R upstream Lake Logan near Hazelwood	Haywood	WS-III Tr
	E5495000	Pigeon R at NC 215 near Canton	Haywood	WS-III Tr CA
	E5600000	Pigeon R at SR 1642 at Clyde	Haywood	C
	E6110000	Richland Cr at SR 1184 near Waynesville	Haywood	B
	E6300000	Jonathans Cr at US 276 near Cove Creek	Haywood	C Tr
	E6450000	Cataloochee Cr at SR 1395 near Cataloochee	Haywood	C Tr ORW
	E6480000	Pigeon R at SR 1338 near Hepco	Haywood	C
	E6500000	Pigeon R at Waterville	Haywood	C
04-03-06				
	E7000000	N Toe R at US 19E near Ingalls	Avery	WS-IV Tr
	E8100000	N Toe R at SR 1162 at Penland	Mitchell	C Tr
	E8200000	S Toe R at SR 1168 near Celo	Yancey	B Tr ORW
	E9990000	Nolichucky R beside SR 1321 at Poplar	Mitchell	B
04-03-07				
	E9800000	Cane R at SR 1417 near Sioux	Yancey	C Tr

Benthic Macroinvertebrate Data Collected in the French Broad River Basin, 1983 – 2003
(Current basinwide sampling sites are in bold print.)

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
<i>04-03-01</i>									
French Broad R	SR 1129	Transylvania	6-(1)	07/08/02	96	54	3.62	2.99	Excellent
				07/08/97	92	51	3.48	2.76	Excellent
				07/06/92	108	51	3.84	2.59	Excellent
				08/07/90	98	43	3.90	2.82	Excellent
				03/15/89	107	57	3.53	2.54	Excellent
				08/09/88	96	48	4.11	3.13	Excellent
				07/21/86	98	47	4.00	2.89	Excellent
				08/24/84	87	37	4.03	3.03	Good
W Fk French Broad R	off NC 281	Transylvania	6-2-(0.5)	08/22/84	83	31	4.19	3.22	Good
				10/01/01	43	28	2.45	1.85	Not Rated
				09/12/00	45	29	2.13	1.82	Excellent
				08/06/90	82	45	2.67	1.96	Excellent
W Fk French Broad R	SR 1306	Transylvania	6-2-(0.5)	05/14/90	96	55	2.67	1.79	Excellent
				10/01/01	59	19	5.82	2.77	Fair
				09/12/00	69	15	6.47	3.09	Fair
				08/06/90	51	15	5.97	3.70	Fair
W Fk French Broad R	NC 281	Transylvania	6-2-(0.5)	05/14/90	72	33	4.95	2.89	Good-Fair
				10/01/01	93	41	4.46	2.66	Good
				08/06/90	78	32	4.95	3.85	Good-Fair
				05/14/90	97	44	4.54	3.13	Good
W Fk French Broad R	SR 1312	Transylvania	6-2-(0.5)	03/15/89	---	27	---	3.54	Good-Fair
				02/11/92	99	53	3.14	1.97	Excellent
				05/21/87	49	49	2.49	2.49	Excellent
				10/31/84	94	42	3.89	2.72	Good
W Fk French Broad R	US 64	Transylvania	6-2-(7.5)	07/09/02	91	51	3.02	2.32	Excellent
				07/07/97	94	50	3	2.13	Excellent
				07/06/92	87	47	3.49	2.35	Excellent
				02/11/92	110	57	3.45	2.37	Excellent
				03/14/89	87	50	3.36	2.49	Excellent
Parker Cr	SR 1310	Transylvania	6-2-4	03/15/89	---	44	---	2.56	Good
Flat Cr	SR 1319	Transylvania	6-2-10	07/08/02	---	38	---	2.44	Excellent
N Flat Cr	SR 1319	Transylvania	6-2-10-1	03/14/89	---	38	---	2.77	Good
Woodruff Br	near US 64	Transylvania	6-2-12	03/22/98	---	22	---	1.82	Not Rated
N Fk French Broad R	NC 215	Transylvania	6-3-(6.5)	03/13/89	---	45	---	1.98	Excellent
N Fk French Broad R	SR 1326	Transylvania	6-3-(6.5)	07/09/02	76	34	4.38	2.98	Good
N Fk French Broad R	SR 1322	Transylvania	6-3-(6.5)	03/13/89	---	36	---	2.84	Good
				07/09/02	79	41	3.52	2.74	Excellent
				07/07/97	76	41	3.34	2.54	Excellent
				07/06/92	85	42	3.41	2.46	Excellent
				03/14/89	89	44	3.65	2.72	Excellent
Tucker Cr	SR 1325	Transylvania	6-3-10	03/14/89	---	35	---	2.69	Good-Fair
M Fk French Broad R	NC 178	Transylvania	6-5	03/14/89	---	35	---	1.75	Good
M Fk French Broad R	SR 1131	Transylvania	6-5	07/08/02	---	51	---	2.15	Excellent
E Fk French Broad R	SR 1105	Transylvania	6-6	03/16/89	---	51	---	1.96	Excellent
E Fk French Broad R	SR 1107	Transylvania	6-6	03/16/89	107	54	3.04	2.25	Excellent
S Pr Gladly Fk	SR 1105	Transylvania	6-6-7-1	05/21/87	---	29	---	3.13	Good-Fair
Galloway Cr	US 64, ab landfill	Transylvania	6-8	05/21/87	---	16	---	2.61	Not Rated
Galloway Cr	US 64, be landfill	Transylvania	6-8	05/21/87	---	10	---	3.00	Not Rated

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Peter Weaver Cr	SR 1329	Transylvania	6-10	07/24/01	44	24	2.44	1.93	Not Rated
Peter Weaver Cr	P-W Creek Rd	Transylvania	6-10	08/30/00	37	16	4.58	4.15	Not Rated
Peter Weaver Cr	Ab SR 1195	Transylvania	6-10	07/24/01	60	24	5.41	4.48	Not Rated
Peter Weaver Cr	SR 1195	Transylvania	6-10	07/24/01	43	10	5.82	4.79	Not Rated
				08/30/00	57	18	5.90	5.19	Not Rated
				05/16/00	60	25	5.88	4.67	Not Rated
				07/07/97	---	12	---	5.35	Fair
Morgan Mill Cr	SR 1331	Transylvania	6-10-1	08/30/00	44	24	3.00	2.29	Not Rated
Morgan Mill Cr	SR 1388	Transylvania	6-10-1	08/30/00	58	20	5.74	3.99	Not Rated
Morgan Mill Cr	SR 1195	Transylvania	6-10-1	07/24/01	45	14	6.18	5.38	Not Rated
Cherryfield Cr	SR 1332	Transylvania	6-11	08/31/00	60	36	2.46	2.09	Not Rated
Cherryfield Cr	SR 1128	Transylvania	6-11	07/24/01	83	41	4.24	3.20	Not Rated
				08/31/00	69	30	3.89	2.85	Not Rated
Mason Cr	SR 1392	Transylvania	6-11-3	07/23/01	62	31	2.94	1.52	Not Rated
				08/31/00	51	31	2.38	1.88	Not Rated
Catheys Cr	SR 1338,	Transylvania	6-16-(8.5)	03/13/89	---	58	---	2.02	Excellent
				05/21/87	---	49	---	1.79	Excellent
Carson Cr	SR 1103	Transylvania	6-20	07/09/02	---	35	---	3.12	Good
Norton Cr	US 64	Transylvania	6-28-2	05/21/87	---	14	---	4.82	Not Rated
Williamson Cr	SR 1541	Transylvania	6-32	05/21/87	---	44	---	2.42	Good
Little R	US 276	Transylvania	6-38-(1)	05/21/87	---	38	---	3.02	Good
Little R	SR 1560	Transylvania	6-38-(1)	07/09/02	---	35	---	3.50	Good
Little R	off SR 1536, above High Falls	Transylvania	6-38-(20)	08/04/87	83	19	6.41	4.97	Fair
				08/05/85	82	22	5.85	4.66	Fair
Laurel Cr	SR 1536	Transylvania	6-38-17	05/22/87	---	44	---	2.10	Good
Little R	Be High Falls	Transylvania	6-38-(20)	07/24/89	81	32	4.63	3.87	Good
Little R	SR 1533	Transylvania	6-38-(20)	07/11/02	---	24	---	4.23	Good-Fair
				07/08/97	---	25	---	4.25	Good-Fair
				07/07/92	---	26	---	4.18	Good-Fair
Crab Cr	SR 1532	Transylvania	6-38-23	10/03/01	76	30	4.97	4.08	Good-Fair
				10/26/00	95	43	4.71	3.62	Good
				05/22/87	---	38	---	2.94	Good
UT Crab Cr	SR 1127	Henderson	6-38-23	10/26/00	53	29	3.46	2.35	Not Rated
04-03-02									
French Broad R	SR 1503	Transylvania	6-(27)	07/22/86	57	21	5.77	4.30	Fair
				08/18/83	55	20	5.85	4.44	Fair
Gash Cr	SR 1322	Henderson	6-47	09/18/86	40	5	7.58	5.94	Not Rated
Gash Cr	US 64	Henderson	6-47	09/18/86	21	1	8.07	5.77	Not Rated
Gash Cr	SR 1203	Henderson	6-47	09/18/86	26	1	8.31	6.22	Not Rated
Gash Cr	SR 1205	Henderson	6-47	08/28/02	34	3	7.42	6.6	Not Rated
				06/04/96	50	6	7.21	5.28	Not Rated
				08/18/86	19	7	6.12	4.54	Not Rated
Mill Pond Cr	SR 1309	Henderson	6-51	08/28/02	35	6	5.64	5.14	Not Rated
				06/04/96	47	14	6.07	5.01	Not Rated
French Broad R	NC 280	Buncombe	6-(54.5)	09/10/02	65	25	5.60	4.46	Good-Fair
				07/08/97	76	32	5.38	4.48	Good-Fair
				07/08/92	86	41	5.08	4.17	Good
				07/26/90	79	33	5.35	3.98	Good-Fair
				08/04/87	77	29	5.46	4.29	Good-Fair
French Broad R	SR 1348	Buncombe	6-(54.5)	07/10/02	73	30	4.76	3.97	Good
				07/09/97	72	32	5.02	4.02	Good-Fair
				07/23/92	73	32	5.23	4.30	Good-Fair
				08/03/87	70	23	5.25	4.01	Good-Fair
				08/13/85	52	18	5.74	4.37	Fair
				08/18/83	55	18	6.11	4.66	Fair
French Broad R	SR 1634	Buncombe	6-(54.5)	07/10/02	57	18	5.79	4.85	Fair
				07/09/97	55	18	5.55	4.68	Good-Fair
				07/23/92	53	19	6.08	4.79	Fair
				07/24/90	61	19	5.73	4.33	Fair
				08/03/87	67	25	5.72	4.17	Good-Fair
Mud Cr	SR 1125	Henderson	6-55	10/03/01	53	22	4.42	4.08	Not Rated
				10/25/00	52	24	4.25	3.65	Not Rated

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Mud Cr	SR 1126	Henderson	6-55	10/03/01	44	15	5.56	5.11	Not Rated
				10/25/00	37	6	6.66	4.61	Not Rated
				07/11/00	61	16	6.21	5.34	Not Rated
				09/08/97	---	2	---	6.99	Not Rated
Mud Cr	SR 1164	Henderson	6-55	10/04/01	49	11	6.29	5.71	Fair
Mud Cr	SR 1647	Henderson	6-55	10/03/01	39	10	6.69	5.92	Poor
				07/11/00	68	22	5.79	4.74	Fair
				09/08/97	43	5	6.82	6.28	Poor
Mud Cr	SR 1508, ab WWTP	Henderson	6-55	07/11/00	59	14	6.35	5.31	Fair
				09/08/97	40	5	7.09	6.24	Poor
				07/07/92	---	10	---	5.52	Poor
				09/12/85	53	10	6.99	5.59	Poor
Mud Cr	SR 1508, be WWTP	Henderson	6-55	07/12/00	46	12	6.59	5.46	Fair
				09/08/97	47	8	7.08	5.84	Poor
				07/07/92	---	7	---	6.36	Poor
				09/12/85	31	3	7.74	7.17	Poor
Mud Cr	US 25	Henderson	6-55	07/13/00	57	10	7.06	5.70	Poor
				09/09/97	54	12	6.71	5.70	Fair
Bat Fk	SR 1807	Henderson	6-55-8-1	04/11/89	---	2	---	2.55	Not Rated
Bat Fk	US 176	Henderson	6-55-8-1	04/11/89	44	6	7.61	5.99	Not Rated
Bat Fk	SR 1809	Henderson	6-55-8-1	07/10/00	37	14	5.48	5.08	Not Rated
				04/11/89	19	2	8.61	1.29	Not Rated
Bat Fk	SR 1803	Henderson	6-55-8-1	04/12/89	25	4	7.73	6.65	Not Rated
Bat Fk	be Dunn Cr	Henderson	6-55-8-1	07/23/01	45	9	6.33	6.12	Not Rated
Bat Fk	SR 1779	Henderson	6-55-8-1	07/23/01	49	7	6.92	6.02	Not Rated
				07/10/00	50	9	6.93	6.06	Fair
				09/09/97	48	7	6.97	6.31	Fair
				04/11/89	---	2	---	7.64	Poor
King Cr	US 25	Henderson	6-55-8-1-2-(2)	10/25/00	36	10	5.25	5.36	Not Rated
				10/04/01	27	4	5.80	5.61	Not Rated
Devils Fk	SR 1006	Henderson	6-55-8-2	03/03/01	51	7	6.30	5.95	Not Rated
				07/13/00	46	8	6.06	5.29	Not Rated
Devils Fk	US 64	Henderson	6-55-8-2	10/25/00	36	8	6.25	6.48	Not Rated
				07/13/00	43	5	7.83	6.24	Poor
Clear Cr	SR 1591	Henderson	6-55-11-(1)	10/23/00	47	14	4.71	3.82	Not Rated
				06/15/93	38	10	5.52	2.85	Not Rated
Clear Cr	SR 1587	Henderson	6-55-11-(1)	10/24/00	65	23	4.52	3.29	Good-Fair
				06/15/93	35	12	5.53	4.37	Fair
Clear Cr	SR 1586	Henderson	6-55-11-(1)	10/03/01	38	4	6.84	6.38	Poor
				03/14/01	54	8	6.27	5.07	Poor
				07/12/00	42	5	6.26	5.04	Poor
				06/15/93	47	12	6.26	4.79	Fair
Laurel Fk	Nr SR 1592	Henderson	6-55-11-2	10/03/01	43	21	3.28	2.11	Good
				10/24/00	53	28	3.08	2.70	Excellent
				06/15/93	31	31	2.19	2.19	Good
Cox Cr	off SR 1569	Henderson	6-55-11-3	10/23/00	46	22	3.20	2.43	Not Rated
Cox Cr	SR 1587	Henderson	6-55-11-3	10/03/01	50	14	5.27	4.21	Not Rated
				03/14/01	48	13	4.53	3.16	Not Rated
				10/23/00	57	16	4.82	2.84	Not Rated
				06/16/93	---	10	---	3.17	Poor
Puncheon Camp Cr	SR 1591	Henderson	6-55-11-4	06/16/93	22	22	3.12	3.12	Not Rated
Clear Cr	SR 1513	Henderson	6-55-11-(5)	10/03/01	48	10	6.17	5.04	Fair
				03/13/01	71	15	6.11	4.47	Fair
				10/26/00	36	8	5.44	4.50	Poor
				07/12/00	56	14	5.95	5.30	Fair
				07/08/97	---	8	---	5.10	Poor
				07/07/92	---	9	---	5.28	Poor
Mill Cr	SR 1586	Henderson	6-55-11-7	10/03/01	42	8	5.13	4.27	Not Rated
				03/14/01	46	10	5.56	4.65	Not Rated
				10/23/00	25	11	4.90	4.54	Not Rated
Kyles Cr	SR 1579	Henderson	6-55-11-8	10/03/01	60	17	4.72	3.22	Not Rated
Harper Cr	SR 1582	Henderson	6-55-11-11	03/14/01	88	37	4.35	3.11	Not Rated
				10/24/00	56	26	3.62	2.68	Excellent

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Cane Cr	SR 2800	Buncombe	6-57-(1)	08/25/99	80	36	4.43	3.82	Good
Cane Cr	SR 1006	Henderson	6-57-(9)	07/11/02	---	11	---	4.27	Fair
				07/08/97	26	26	4.22	4.22	Good-Fair
				07/07/92	27	27	4.34	4.34	Good-Fair
Bent Cr	ab Boyd's Br	Buncombe	6-67-(1)	11/05/01	35	35	2.55	2.55	Excellent
Bent Cr	be Boyd's Br	Buncombe	6-67-(1)	11/07/01	31	31	2.53	2.53	Excellent
Boyd's Br	near mouth	Buncombe	6-67-6	11/05/01	30	30	1.98	1.98	Excellent
Bent Cr	be WWTP	Buncombe	6-67-(7)	11/07/01	51	18	4.39	2.83	Good-Fair
Wesley Cr	ab rip-rap area	Buncombe	6-67-10	11/06/01	48	21	4.13	3.04	Not Rated
Wesley Cr	be rip-rap area	Buncombe	6-67-10	11/07/01	48	22	4.05	2.90	Not Rated
Dingle Cr	US 25 ab Gerber	Buncombe	6-71	02/10/87	---	10	---	5.22	Not Rated
Dingle Cr	US 25 be Gerber	Buncombe	6-71	02/10/87	---	2	---	4.34	Not Rated
UT Dingle Cr	Blue Ridge Parkway #1	Buncombe	6-71	02/10/87	---	16	---	2.12	Not Rated
Dingle Cr	Blue Ridge Parkway #2	Buncombe	6-71	02/10/87	---	14	---	3.03	Fair
Hominy Cr	US 19/23	Buncombe	6-76	05/15/02	62	35	4.27	3.97	Good
Hominy Cr	SR 1141	Buncombe	6-76	01/18/89	---	18	---	3.19	Fair
Hominy Cr	NC 151	Buncombe	6-76	05/14/02	71	36	4.37	3.90	Good
				09/10/97	71	32	5.18	4.13	Good-Fair
				07/09/92	---	28	---	3.31	Good
Hominy Cr	NC 112	Buncombe	6-76	05/16/02	60	29	4.82	4.28	Good-Fair
				09/09/97	63	16	5.84	4.84	Fair
				07/09/92	---	11	---	3.94	Fair
Hominy Cr	SR 3412	Buncombe	6-76	05/16/02	65	21	5.62	4.95	Fair
				09/09/97	63	13	6.48	5.19	Fair
				07/10/97	---	13	---	4.12	Fair
				07/09/92	---	8	---	3.76	Poor
Web Br	SR 1130	Buncombe	6-76-4	05/14/02	---	24	---	4.26	Not Rated
S Hominy Cr	NC 151	Buncombe	6-76-5	05/15/02	---	38	---	2.99	Good
S Hominy Cr	NC 151	Buncombe	6-76-5	08/28/02	---	26	---	2.72	Good-Fair
				05/14/02	72	35	3.76	3.17	Good
				05/15/00	64	34	4.10	3.77	Good
				09/10/97	38	8	6.34	5.31	Poor
				07/09/92	---	20	---	3.24	Good-Fair
Stony Fk	NC 151	Buncombe	6-76-5-3	05/15/02	65	39	2.49	2	Good
Beaverdam Cr	SR 3449	Buncombe	6-76-5-8	05/15/02	63	44	2.25	1.83	Excellent
Beaverdam Cr	off SR 3449	Buncombe	6-76-5-8	05/15/02	62	34	3.97	3.25	Good
Pole Cr	SR 1220	Buncombe	6-76-6	05/14/02	---	23	---	3.16	Not Rated
Bill Moore Cr	SR 3439	Buncombe	6-76-7	05/14/02	67	38	2.94	2.60	Not Rated
Moore Cr	Brookside Circle	Buncombe	6-76-8	05/14/02	30	9	5.63	4.75	Fair
Canie Cr	Bear Cr Rd	Buncombe	6-76-12	05/16/02	33	3	7.51	7.51	Poor
Swannanoa R	SR 2500	Buncombe	6-78	08/27/02	62	19	5.42	4.22	Fair
				10/06/87	56	19	5.82	4.68	Fair
Swannanoa R	SR 2436	Buncombe	6-78	08/27/02	---	22	---	4.75	Good-Fair
				10/07/87	50	18	5.49	4.65	Good-Fair
Swannanoa R	SR 2416	Buncombe	6-78	08/27/02	75	24	5.86	4.58	Fair
				10/07/87	60	22	5.17	4.26	Fair
Swannanoa R	Azalea Rd	Buncombe	6-78	01/11/93	78	31	5.24	4.33	Good-Fair
Swannanoa R	Azalea Park	Buncombe	6-78	08/27/02	21	21	4.36	4.36	Good-Fair
Swannanoa R	NC 81/240 at River Rd	Buncombe	6-78	03/24/88	70	24	5.88	4.18	Fair
				10/06/87	68	24	5.87	4.42	Good-Fair
				07/24/87	76	29	5.62	4.57	Good-Fair

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Swannanoa R	US 25	Buncombe	6-78	08/28/02	73	26	5.79	4.70	Good-Fair
				07/09/97	62	28	5.44	4.26	Good-Fair
				07/08/92	72	27	5.74	4.43	Good-Fair
				07/27/89	60	15	6.28	4.47	Fair
				03/24/88	47	8	7	5.96	Poor
				10/05/87	54	17	6.40	5.07	Fair
				07/24/87	73	33	5.25	4.21	Good-Fair
				08/12/85	41	9	7.44	5.48	Poor
Flat Cr	above Big Piney Br	Buncombe	6-78-6-(1)	12/11/91	35	35	1.54	1.54	Excellent
Flat Cr	US 70	Buncombe	6-78-6-(4)	12/14/99	62	31	4.10	3.03	Good-Fair
				10/06/87	---	15	---	4.02	Fair
Big Slaty Br	near NC 9	Buncombe	6-78-6-2	12/11/91	---	34	---	1.50	Excellent
Little Slaty Br	near NC 9	Buncombe	6-78-6-3	12/11/91	---	37	---	1.55	Excellent
Big Piney Br	near NC 9	Buncombe	6-78-6-5	12/11/91	---	32	---	1.37	Excellent
Wolfpit Br	near High Top Colony Rd	Buncombe	6-78-10-(1)	12/10/91	---	26	---	1.35	Excellent
N Fk Swannanoa R	SR 2576, ab Grovestone	Buncombe	6-78-11-(13)	10/08/87	---	14	---	3.85	Fair
N Fk Swannanoa R	US 70, be Grovestone	Buncombe	6-78-11-(13)	08/27/02	---	22	---	4.01	Good-Fair
				10/07/87	---	12	---	4.46	Fair
Laurel Br	Private road	Buncombe	6-78-11-16	02/13/92	58	32	2.88	1.70	Excellent
Beetree Cr	SR 2416	Buncombe	6-78-15-(1)	10/06/87	---	19	---	3.72	Good-Fair
Beetree Cr	SR 2427	Buncombe	6-78-15-(1)	03/17/86	72	39	3.59	2.83	Excellent
Beetree Cr	SR 2429	Buncombe	6-78-15-(6)	10/07/87	---	15	---	3.01	Good-Fair
Bull Cr	SR 2408	Buncombe	6-78-18	10/08/87	---	27	---	3.47	Good
Christian Cr	Buckeye Cove Rd	Buncombe	6-78-19	01/12/99	55	32	2.95	2.16	Good
		Buncombe		10/05/87	---	17	---	4.53	Good-Fair
Grassy Br	off SR 2403	Buncombe	6-78-20	12/14/99	---	14	---	4.10	Not Rated
Gashes Cr	SR 3071	Buncombe	6-78-21	05/25/94	61	20	4.71	2.93	Good-Fair
Haw Cr	Ab US 70	Buncombe	6-78-22	12/15/99	---	12	---	3.54	Not Rated
Ross Cr	Chunn's Cove Rd.	Buncombe	6-78-23	06/26/02	43	16	4.33	3.26	Not Rated
Ross Cr	US 70	Buncombe	6-78-23	01/12/99	34	15	3.75	2.94	Not Rated
				06/26/02	29	6	7.03	5.57	Not Rated
				01/12/99	21	2	8.07	6.16	Poor
Sweeten Cr	Biltmore Village	Buncombe	6-78-24	12/15/99	---	3	---	6.42	Not Rated
Sweeten Cr	US 25A	Buncombe	6-78-24	10/05/87	---	1	---	5.50	Not Rated
Newfound Cr	SR 1296	Buncombe	6-84	06/12/89	74	38	3.93	3.02	Excellent
				06/09/88	94	39	4.29	3.53	Excellent
Newfound Cr	SR 1297	Buncombe	6-84	06/12/89	56	16	6.63	4.90	Not Rated
				06/09/88	62	17	6.46	4.87	Not Rated
				06/09/88	62	17	6.46	4.87	Not Rated
Newfound Cr	SR 1378	Buncombe	6-84	04/23/86	50	12	6.72	4.76	Fair
Newfound Cr	SR 1622	Buncombe	6-84	07/12/02	70	23	6.16	4.97	Fair
				05/18/99	98	38	5.35	4.34	Good-Fair
				07/09/97	---	20	---	4.97	Good-Fair
				07/27/89	59	17	7.10	5.50	Fair
				06/12/89	52	7	7.64	6.28	Poor
				04/10/89	47	7	7.31	5.65	Poor
				02/15/89	40	3	7.96	6.77	Poor
				06/09/88	65	13	7.33	6.18	Poor
				04/23/86	43	10	6.62	5.13	Poor
				07/10/02	---	38	---	3.30	Excellent
				07/10/02	---	27	---	3.69	Good-Fair
				07/09/97	---	30	---	3.33	Good
Flat Cr	SR 1740	Buncombe	6-88	07/23/92	---	20	---	3.37	Good-Fair
				07/11/02	---	22	---	3.91	Good-Fair
				04/24/86	75	24	4.94	3.55	Good-Fair
Sandymush Cr	SR 1114	Madison	6-92-(9)	07/10/02	---	32	---	3.50	Good
				07/10/97	---	30	---	4.02	Good
				07/22/92	---	36	---	4.30	Excellent
				07/22/92	---	36	---	4.30	Excellent

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
04-03-03									
Davidson R	US 276	Transylvania	6-54-(15.5)	7/22/02	36	36	3.35	3.35	Excellent
		Transylvania		7/22/97	113	52	3.76	2.65	Excellent
		Transylvania		7/7/92	45	45	1.83	1.83	Excellent
Boylston Cr	SR 1314	Henderson	6-52-(0.5)	7/22/02	59	27	4.62	3.56	Good-Fair
		Henderson		7/21/97	71	23	5.53	4.36	Good-Fair
		Henderson		7/7/92	---	26	---	4.65	Good-Fair
Mills R	SR 1337	Henderson	6-54-(1)	6/25/02	74	39	4.39	3.12	Good
		Henderson		7/21/97	115	53	3.46	2.35	Excellent
		Henderson		8/2/94	---	43	---	2.45	Excellent
		Henderson		7/8/92	88	51	3.21	2.31	Excellent
		Henderson		7/24/90	105	51	3.68	2.52	Excellent
		Henderson		8/8/88	84	37	4.04	2.82	Excellent
		Henderson		8/11/88	---	32	---	2.34	Good
		Henderson		7/22/86	90	48	3.62	2.81	Excellent
		Henderson		8/20/84	90	45	3.44	2.57	Excellent
		Henderson		9/10/97	54	34	3.17	2.63	Good
N Fk Mills R	FS Rd 5000	Henderson	6-54-2-(4)	6/25/02	---	40	---	1.94	Excellent
N Fk Mills R	FS Rd 1206, Ab Rocky Br	Henderson	6-54-2-(4)	7/21/97	---	41	---	1.66	Excellent
	FS Rd 1206, Ab Rocky Br	Henderson	6-54-2-(4)	6/14/93	93	47	3.03	2.03	Excellent
Wash Cr	off SR 1345	Henderson	6-54-2-6	6/14/93	73	47	2.22	1.80	Excellent
N Fk Mills R	SR 1341	Henderson	6-54-2-(9)	6/25/02	70	31	4.62	3.3	Good
		Henderson		6/14/93	102	50	2.99	2.19	Excellent
		Henderson		7/12/85	91	37	3.92	2.81	Excellent
Bradley Cr	FS Rd 1206	Transylvania	6-54-3-17	4/16/91	---	55	---	1.68	Excellent
	FS Rd 1206 ab State Rock Cr	Transylvania		4/16/91	---	47	---	1.85	Excellent
	FS Rd 1206 ab Yellow Gap Cr	Transylvania		7/10/91	---	38	---	1.52	Excellent
	FS Rd 1206	Transylvania		4/16/91	---	60	---	1.61	Excellent
	FS Rd be Laurel Cr	Henderson		9/10/97	66	40	2.43	1.75	Excellent
Bradley Fk	SR 1340	Henderson	6-54-3-(17.5)	6/25/02	70	35	4.35	3.08	Good
S Fk Mills R	SR 1340	Henderson	6-54-3-(17.5)	6/15/93	113	57	3.12	2.31	Excellent
		Henderson		6/24/02	58	28	5.54	3.95	Good-Fair
Mills R	SR 1353	Henderson	6-54-(5)	11/7/01	---	6	---	5.08	Poor
		Henderson		10/7/98	19	2	6.69	5.96	Poor
		Henderson		7/21/97	78	24	5.17	3.31	Good-Fair
		Henderson		8/2/94	31	5	6.04	4.43	Poor
		Henderson		6/15/93	90	40	4.18	2.80	Good
		Henderson		7/8/92	81	35	4.19	3.14	Good
		Henderson		10/18/94	19	19	2.65	2.65	Good-Fair
		Henderson		12/15/92	4	0	8.43	0	Poor
		Henderson		12/15/92	43	15	5.63	3.85	Fair
UT Mills R	SR 1336	Henderson	6-54-(5)	10/18/94	19	19	2.65	2.65	Good-Fair
UT Mills R	Greenhouse	Henderson	6-54-(5)	12/15/92	4	0	8.43	0	Poor
UT Mills R	SR 1338	Henderson	6-54-(5)	12/15/92	43	15	5.63	3.85	Fair
Brandy Br	NC 191, ab WTP	Henderson	6-54-6	10/18/94	49	10	6.62	5.70	Fair
04-03-04									
French Broad R	NC 213	Madison	6-(54.5)	6/26/02	81	26	5.86	4.59	Good-Fair
				7/7/97	52	25	4.81	3.94	Good-Fair
				7/23/92	67	25	5.39	4.64	Good-Fair
				7/24/90	49	18	5.54	4.73	Good-Fair
				8/9/88	71	22	5.90	4.76	Fair
				7/23/86	79	31	5.45	3.98	Good-Fair
				8/13/85	62	18	5.68	4.52	Good-Fair
				8/29/84	41	16	5.38	4.45	Good-Fair
				8/18/83	54	19	5.61	4.37	Good-Fair
				7/9/02	---	32	---	4.13	Good
				7/7/97	---	27	---	2.78	Good-Fair
Ivy Cr (R)	SR 2150	Buncombe	6-96-(0.5)	7/22/92	---	38	---	3.47	Excellent
				8/31/93	100	41	4.67	3.75	Good
Ivy Cr (R)	SR 2153	Buncombe	6-96-(0.5)	8/31/93	100	41	4.67	3.75	Good

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Dillingham Cr	SR 2173 ab Stoney Cr	Buncombe	6-96-1-(1)	8/31/93	---	31	---	2.32	Good
Dillingham Cr	SR 2173, be Stoney Cr	Buncombe	6-96-1-(1)	8/31/93	86	36	4.40	3.17	Good
Stony Cr	SR 2178	Buncombe	6-96-1-5	8/30/93	77	33	3.35	2.38	Good
Carter Cr	At mouth, ab confl w Mineral Cr	Buncombe	6-96-1-5-1	8/30/93	---	29	---	1.92	Excellent
Mineral Cr	off SR 2178	Buncombe	6-96-1-5-2	8/30/93	---	29	---	1.39	Excellent
Paint Fk	SR 1531	Madison	6-96-2	5/30/02	68	29	4.86	3.76	Not Rated
Paint Fk	SR 1539	Madison	6-96-2	5/30/02	70	29	5.09	4.01	Not Rated
N Fk Ivy Cr	SR 2027	Buncombe	6-96-3	9/1/93	---	35	---	2.70	Good
Little Ivy Cr	SR 1547	Madison	6-96-10	5/29/02	62	15	6.49	4.97	Fair
				1/21/97	---	24	---	3.52	Good-Fair
				8/31/93	---	27	---	4.21	Good-Fair
Little Ivy Cr	SR 1610	Madison	6-96-10	5/29/02	78	27	6.19	4.60	Good-Fair
				7/7/97	---	16	---	3.91	Fair
				7/22/92	---	35	---	3.87	Good
M Fk Little Ivy Cr	SR 1526	Madison	6-96-10-1	5/30/02	61	27	4.90	3.60	Not Rated
M Fk Little Ivy Cr	US 19	Madison	6-96-10-1	5/29/02	48	19	6.29	4.43	Not Rated
California Cr	SR 1348	Madison	6-96-10-2	5/28/02	52	28	3.03	2.24	Not Rated
California Cr	SR 1349	Madison	6-96-10-2	1/22/97	---	31	---	2.28	Good
California Cr	SR 1541	Madison	6-96-10-2	5/28/02	42	13	5.77	4.26	Not Rated
				1/22/97	53	29	3.91	2.97	Good-Fair
Big Br	off SR 1540	Madison	6-96-10-5	5/29/02	45	15	5.52	4.73	
Big Br	SR 1549	Madison	6-96-10-5	5/29/02	36	9	5.74	4.68	Not Rated
UT Big Br	NC 213	Madison	6-96-10-5	5/28/02	32	6	7.03	4.76	Not Rated
Ivy Cr (R)	SR 1565	Madison	6-96-(11.7)	8/31/93	85	39	5.10	3.90	Good
Ivy Cr (R)	US 25/70	Madison	6-96-(11.7)	6/26/02	80	30	4.92	3.77	Good-Fair
				7/7/97	59	28	4.72	3.54	Good-Fair
				9/2/93	---	33	---	3.31	Good
				7/22/92	87	36	4.67	3.63	Good
Gabriel Cr	SR 1559. last bridge	Madison	6-96-12	8/31/93	---	21	---	3.86	Good-Fair
Bull Cr	NC 213	Madison	6-96-16	8/31/93	---	25	---	3.46	Good-Fair
Hunter Cr	Ab old reservoir	Madison	6-106-2-(1)	12/10/91	---	30	---	1.65	Excellent
Big Laurel Cr	SR 1503	Madison	6-112	7/8/02	---	45	---	2.37	Excellent
				7/8/97	---	33	---	2.31	Good
Big Laurel Cr	SR 1318	Madison	6-112	7/8/02	80	42	3.31	2.86	Excellent
				1/21/97	65	37	2.73	2.39	Excellent
Big Laurel Cr	SR 1318/1314	Madison	6-112	1/21/97	---	33	---	1.98	Good
Big Laurel Cr	NC 208	Madison	6-112	5/30/02	90	46	4.68	3.55	Good
				7/8/97	---	36	---	2.66	Excellent
				8/19/92	---	38	---	3.00	Excellent
Puncheon Fk	SR 1503	Madison	6-112-5	7/8/02	---	40	---	2.83	Excellent
				7/8/97	---	31	---	2.24	Good
Shelton Laurel Cr	NC 208	Madison	6-112-26	6/27/02	---	32	---	3.64	Good
				7/8/97	---	31	---	3.13	Good
				8/19/92	---	32	---	2.90	Good
				5/16/90	---	44	---	2.55	Excellent
Hickory Fk	SR 1310	Madison	6-112-26-7	5/16/90	---	43	---	1.90	Excellent
W Pr Hickory Fk	SR 1310	Madison	6-112-26-7-1	5/16/90	---	38	---	1.62	Excellent
E Pr Hickory Fk	FS Rd 465	Madison	6-112-26-7-2	5/16/90	---	32	---	1.35	Excellent
L Laurel Cr	NC 208	Madison	6-112-26-13	5/31/02	59	32	2.77	2.00	Not Rated
Spring Cr	NC 209	Madison	6-118-(27)	6/27/02	---	37	---	3.33	Excellent
				7/8/97	---	31	---	3.04	Good
				8/19/92	---	26	---	2.75	Good-Fair

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
<i>04-03-05</i>									
Pigeon R	off NC 215	Haywood	5- (1)	7/24/84	87	37	4.63	3.49	Good
Pigeon R	NC 215	Haywood	5- (1)	7/25/02	59	30	4.93	3.82	Good-Fair
		Haywood		12/15/99	69	36	4.33	3.50	Good
		Haywood		7/22/97	94	44	3.82	2.94	Excellent
		Haywood		9/7/95	74	29	4.59	3.04	Good-Fair
		Haywood		8/2/94	70	30	4.47	3.36	Good
		Haywood		1/10/93	86	34	4.41	2.95	Good
		Haywood		8/19/92	84	37	4.52	3.45	Good
		Haywood		8/11/88	---	34	---	3.25	Good
		Haywood		8/10/88	85	33	5.15	3.69	Good-Fair
		Haywood		2/22/88	87	35	4.56	3.56	Good
		Haywood		7/25/86	80	38	4.77	3.82	Good
		Haywood		7/24/84	82	32	4.30	2.71	Good
		Haywood		8/17/83	86	29	5.13	3.73	Good-Fair
		Haywood		7/25/02	37	37	2.47	2.47	Excellent
W Fk Pigeon R	SR 1216	Haywood	5-2	7/22/97	50	50	1.58	1.58	Excellent
		Haywood		1/12/93	81	47	2.52	1.73	Excellent
		Haywood		7/11/91	---	44	---	1.85	Excellent
		Haywood		5/16/90	48	48	1.83	1.83	Excellent
UT W Fk Pigeon R Tom Cr	near NC 215	Haywood	5-2	5/16/90	---	34	---	1.26	Excellent
	near NC 215	Haywood	5-2-5	12/9/91	---	35	---	1.52	Excellent
M Pr W Fk Pigeon R	at mouth	Haywood		7/11/91	---	39	---	1.55	Excellent
		Haywood		4/17/91	---	42	---	1.40	Excellent
		Haywood	5-2-7	5/16/90	---	42	---	1.70	Excellent
R Pr M Pr W Fk Pigeon R	At road crossing, mouth	Haywood	5-2-7-7	4/17/91	---	42	---	1.37	Excellent
		Haywood		12/9/91	---	36	---	1.75	Excellent
		Haywood		7/11/91	---	34	---	1.65	Excellent
		Haywood		5/16/90	---	36	---	1.50	Excellent
UT L E Fk Pigeon R	near Shining Rock Wilderness	Haywood	5-2-12-(0.5)	4/17/91	---	38	---	1.45	Excellent
L E Fk Pigeon R	SR 1129	Haywood	5-2-12-(5.5)	4/17/91	---	51	---	1.50	Excellent
E Fk Pigeon R	US 276	Haywood	5-3-(6.5)	7/22/02	---	40	---	2.80	Excellent
		Haywood		7/22/97	109	50	3.54	2.43	Excellent
Pigeon R	SR 1642	Haywood	5-(7)	7/25/84	86	38	4.22	2.81	Good
		Haywood		9/10/02	49	9	6.84	5.27	Poor
		Haywood		12/15/99	55	18	5.94	4.34	Fair
		Haywood		7/23/97	78	25	5.96	4.42	Good-Fair
		Haywood		9/7/95	44	16	6.02	5.38	Fair
		Haywood		8/2/94	44	13	6.14	5.29	Fair
		Haywood		8/19/92	63	16	6.74	4.41	Fair
		Haywood		9/11/89	47	7	6.80	4.39	Poor
		Haywood		9/11/89	---	5	---	5.21	Poor
		Haywood		8/10/88	31	4	7.83	5.19	Poor
		Haywood		2/22/88	51	12	6.86	4.70	Poor
		Haywood		7/24/86	34	2	8.23	3.59	Poor
		Haywood		8/25/84	39	5	7.65	5	Poor
Pigeon R	SR 1625, be Richland Cr	Haywood	5-(7)	8/3/94	54	15	6.11	4.77	Fair
Pigeon R	near Crabtree	Haywood	5-(7)	2/22/88	53	16	6.24	4.11	Fair
Pigeon R	SR 1338	Haywood	5-(7)	9/9/02	56	19	5.60	4.36	Good-Fair
		Haywood		7/23/97	78	27	5.44	4.18	Good-Fair
		Haywood		8/3/94	57	22	5.40	4.71	Good-Fair
		Haywood		8/10/88	49	14	6.11	4.01	Fair
		Haywood		2/23/88	46	24	4.95	3.99	Good-Fair
Pigeon R	at Counterfeit Br	Haywood	5-(7)	3/18/92	77	41	4.25	2.97	Good
		Haywood		4/22/92	94	43	4.46	2.90	Good

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Pigeon R	at Hurricane Cr	Haywood	5-(7)	3/18/92	74	30	5.59	3.82	Good-Fair
Pigeon R	off I-40	Haywood	5-(7)	4/22/92	74	28	5.80	4.50	Good-Fair
		Haywood		7/25/02	75	38	4.96	3.98	Good
		Haywood		7/24/97	81	40	4.77	3.13	Good
		Haywood		8/3/94	58	27	4.37	3.61	Good
		Haywood		7/25/90	57	22	4.76	3.97	Good-Fair
		Haywood		7/27/89	62	28	5.24	4.31	Good-Fair
		Haywood		8/10/88	67	24	4.89	3.61	Good-Fair
		Haywood		8/7/87	58	25	5.06	3.75	Good-Fair
		Haywood		7/24/86	67	28	4.77	3.95	Good-Fair
		Haywood		8/12/85	57	17	5.85	4.06	Fair
		Haywood		8/24/84	68	30	4.82	3.58	Good
		Haywood		8/17/83	66	24	5.41	3.68	Good-Fair
Rough Cr	near SR 1616 Bus 23	Haywood	5-8-4-(1)	9/11/97	---	29	---	1.22	Excellent
Richland Cr		Haywood	5-16-(1)	7/29/02	---	31	---	2.91	Good
Richland Cr	SR 1184	Haywood	5-16-(1)	7/25/97	---	23	---	2.79	Good-Fair
		Haywood		8/18/92	---	17	---	3.51	Fair
		Haywood		7/24/02	---	19	---	4.29	Good-Fair
		Haywood		7/24/97	---	24	---	3.22	Good-Fair
		Haywood		8/18/92	---	26	---	3.38	Good-Fair
		Haywood		8/10/88	42	11	6.24	5.30	Fair
		Haywood		8/12/85	28	9	6.07	4.07	Poor
		Haywood		8/17/83	42	9	7.19	4.10	Poor
UT Richland Cr	J&J Farm Rd	Haywood	5-16-4	5/18/99	11	2	6.40	4.99	Not Rated
UT Richland Cr	off SR 1157	Haywood		5/18/99	---	26	---	1.87	Good
Nolen Cr	off SR 1158	Haywood		5/15/02	42	29	2.32	2.21	Not Rated
Hyatt Cr	SR 1159, ds	Haywood		4/18/84	30	10	6.21	4.09	Fair
Shiny Cr	SR 1159, us	Haywood	5-16-7-3	4/18/84	41	17	5.65	3.87	Good-Fair
	SR 1161	Haywood		5/13/02	36	20	3.29	2.63	Not Rated
	SR 1165	Haywood		5/13/02	40	22	4.25	3.91	Not Rated
	Ab Allen Res.	Haywood		7/25/97	---	43	---	1.30	Excellent
	SR 1219	Haywood		12/9/91	---	35	---	1.38	Excellent
	SR 1519	Haywood		7/25/02	45	20	5.42	4.46	Good-Fair
Jonathans Cr	SR 1306	Haywood	5-16-(16)	7/25/97	---	15	---	4.42	Fair
		Haywood		8/18/92	---	14	---	4.47	Fair
		Haywood		7/24/97	---	46	---	1.50	Excellent
		Haywood		8/18/92	---	41	---	1.85	Excellent
Jonathans Cr	SR 1305	Haywood	5-26-(7)	7/24/02	---	36	---	1.89	Excellent
	SR 1322	Haywood	5-26-(7)	7/25/02	---	36	---	3.57	Excellent
Jonathans Cr	SR 1349	Haywood	5-26-(7)	7/24/97	---	41	---	2.67	Excellent
		Haywood		8/18/92	---	33	---	3.30	Good
		Haywood		9/9/02	---	34	---	3.84	Good
		Haywood		7/24/97	---	39	---	3.11	Excellent
		Haywood		8/18/92	---	23	---	3.70	Good-Fair
Fines Cr	SR 1355	Haywood	5-32	7/24/02	---	24	---	3.52	Good-Fair
		Haywood		7/23/97	---	27	---	2.63	Good-Fair
Cataloochee Cr	SR 1395	Haywood	5-41	8/17/92	---	19	---	3.74	Good-Fair
		Haywood		7/24/02	---	45	---	1.64	Excellent
		Haywood		7/23/97	102	50	2.72	1.68	Excellent
		Haywood		8/17/92	84	42	3.03	1.87	Excellent
		Haywood		7/11/91	80	48	2.72	2.02	Excellent
		Haywood		7/27/89	43	43	1.90	1.90	Excellent
		Haywood		7/27/89	101	53	3.02	1.94	Excellent
		Haywood		1/24/90	85	51	2.34	1.83	Excellent
		Haywood		1/24/90	47	47	1.68	1.68	Excellent
		Haywood		4/11/90	86	56	2.30	1.85	Excellent
		Haywood		7/25/90	95	51	3.16	1.86	Excellent
		Haywood		10/23/90	86	47	2.74	1.82	Excellent
		Haywood		7/24/86	102	47	3.51	2.09	Excellent
		Haywood		8/24/84	96	42	3.37	1.92	Excellent

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
Cataloochee Cr	near SR 1395, ab Palmer Cr	Haywood	5-41	1/24/90	---	45	---	1.52	Excellent
UT Rough Fk	near SR 1395	Haywood	5-41-1	4/18/91	---	47	---	1.66	Excellent
Palmer Cr	near SR 1395	Haywood	5-41-2	4/18/91	---	46	---	1.51	Excellent
Pretty Hollow Cr	near SR 1395 ab	Haywood	5-41-2-4	4/18/91	---	47	---	1.56	Excellent
Lower Double Br	Cataloochee Cr	Haywood	5-41-6	1/24/90	57	36	1.94	1.34	Excellent
		Haywood		4/11/90	57	36	2.25	1.41	Excellent
		Haywood		7/25/90	54	31	2.89	1.73	Excellent
		Haywood		10/23/90	63	37	2.64	1.48	Excellent
L Cataloochee Cr	SR 1397 FS Rd off I- 40 at Mile Marker 13	Haywood	5-41-10	1/24/90	---	40	---	1.95	Excellent
Hurricane Cr	Gov't Rd, near Cmpgd.	Haywood	5-44	7/23/02	---	32	---	1.93	Good
Cold Springs Cr		Haywood	5-45	3/18/92	78	45	2.89	1.80	Excellent
		Haywood		4/23/92	84	48	2.98	2.13	Excellent
Big Cr	SR 1322 in GSMNP	Haywood	5-59	7/24/97	---	47	---	1.38	Excellent
Chestnut Br	SR 1322 in GSMNP	Haywood		7/23/02	---	28	---	1.93	Good
04-03-06									
Nolichucky R	SR 1321	Mitchell	7	7/9/02	89	43	4.37	3.62	Good
				7/9/97	71	37	4.03	3.62	Good
				7/21/92	87	41	4.23	3.41	Good
				7/23/90	83	38	4.44	3.41	Good
				8/9/88	93	35	4.95	3.89	Good
				7/23/86	84	37	4.95	3.74	Good
				8/14/85	72	28	4.79	3.53	Good-Fair
				8/29/84	68	31	4.55	3.89	Good
				8/9/83	78	34	4.60	3.96	Good
				7/10/02	---	37	---	1.73	Excellent
				9/11/85	75	29	3.75	2.23	Good
				7/10/02	89	39	4.92	3.86	Good
				7/10/97	72	42	4.06	3.56	Good
				7/21/92	99	41	4.32	3.24	Good
				8/8/89	93	34	4.50	3.78	Good
Roaring Cr Jones Cr N Toe R	US 19E SR 1100 US 19E	Avery	7-2-15 7-2-24 7-2-(27.3)	2/14/89	59	35	4.19	2.99	Good
				9/11/85	50	18	5.71	3.50	Fair
				9/11/85	64	22	5.27	3.87	Good-Fair
				9/11/85	83	31	4.78	3.26	Good
				8/15/85	61	17	6.30	3.92	Fair
				7/10/02	60	22	5.90	4.15	Fair
				7/9/97	70	34	4.74	3.72	Good
				7/20/92	78	23	5.25	3.36	Good-Fair
				8/7/89	63	24	5.58	3.50	Good-Fair
				8/3/87	61	20	5.95	3.72	Fair
				8/8/88	---	10	---	2.88	Poor
				7/23/86	70	22	5.93	3.71	Fair
				8/14/85	46	12	6.20	3.67	Fair
				8/28/84	63	22	5.42	3.43	Good-Fair

Waterbody	Location	County	Index No.	Date	ST	EPT	BI	EPT BI	Rating
N Toe R	SR 1314	Yancey	7-2-(27.7)	7/9/02	75	36	4.88	3.81	Good
				7/9/97	74	40	4.66	4.17	Good
				7/21/92	94	42	4.83	4.07	Good
Brushy Cr	ab landfill	Avery	7-2-29	2/14/89	---	27	---	2.36	Good-Fair
Brushy Cr	be landfill	Avery	7-2-29	2/14/89	---	24	---	3.40	Good-Fair
Little Bear Cr	be Indusmin	Mitchell	7-2-46-1	9/10/85	9	2	7.60	4.30	Poor
Little Bear Cr	near NC 226	Mitchell	7-2-46-1	9/10/85	31	8	4.74	2.76	Fair
	ab Indusmin								
Big Crabtree Cr	SR 1002	Mitchell	7-2-48	7/20/92	---	32	---	2.06	Good
Big Crabtree Cr	US 19E	Mitchell	7-2-48	7/11/02	---	37	---	3.02	Excellent
				7/10/97	---	40	---	2.24	Excellent
				1/17/91	---	51	---	2.01	Excellent
S Toe R	ab NC 80	Yancey	7-2-52-(1)	1/17/91	---	51	---	2.01	Excellent
S Toe R	be NC 80	Yancey	7-2-52-(1)	6/18/90	---	41	---	2.05	Excellent
S Toe R				1/17/91	---	44	---	1.70	Good
S Toe R				6/18/90	---	46	---	2.12	Excellent
S Toe R				6/18/90	---	46	---	2.12	Excellent
S Toe R	SR 1167	Yancey	7-2-52-(1)	7/11/02	100	50	3.49	2.57	Excellent
				7/10/97	82	40	3.24	2.49	Excellent
				7/20/92	102	48	3.55	2.56	Excellent
				8/9/88	113	48	4.10	2.87	Excellent
				8/13/85	99	42	3.97	3.21	Excellent
				8/19/83	100	41	4.30	3.23	Good
				1/29/96	71	48	2.32	1.90	Excellent
S Toe R	SR 1168	Yancey	7-2-52-(1)	1/29/96	43	35	1.85	1.55	Excellent
S Toe R	SR 1205	Yancey	7-2-52-(1)	1/29/96	56	44	2.04	1.54	Excellent
L Crabtree Cr	SR 1144	Yancey	7-2-52-33	7/10/02	68	29	4.67	2.95	Good-Fair
R Fk Cane Cr	SR 1206	Mitchell	7-2-59-1	7/11/02	76	41	3.27	2.48	Excellent
Big Rock Cr	NC 197	Mitchell	7-2-64	7/9/02	---	36	---	2.97	Excellent
				7/9/97	---	34	---	2.38	Good
				7/21/92	---	43	---	2.71	Excellent
04-03-07									
Cattail Cr	SR 1102	Yancey	7-3-9	1/30/96	39	26	2.27	1.51	Good
Cane R	US 19W	Yancey	7-3-(13.7)	7/9/02	91	46	4.38	3.63	Excellent
				7/9/97	84	46	4.35	3.54	Excellent
				7/21/92	93	48	4.36	3.48	Excellent
				8/7/89	81	37	4.44	3.72	Good
				8/3/87	77	34	4.55	3.65	Good
				8/14/85	62	23	5.17	3.63	Good-Fair
				8/19/83	70	27	5.11	3.81	Good-Fair
Cane R	US 19E	Yancey	7-3-(13.7)	7/10/02	105	49	4.77	3.59	Excellent
Banks Cr	SR 1118	Yancey	7-3-21-4	7/11/02	37	25	2.92	2.10	Not Rated
Bald Mountain Cr	SR 1408	Yancey	7-3-32	7/9/02	---	40	---	2.77	Excellent
				7/8/97	---	32	---	2.47	Good
				7/21/92	---	26	---	3.37	Good-Fair

Fish Community Structure Data Collected in the French Broad River Basin, 1993 – 2003
(Current basinwide sampling sites are in bold print.)

Subbasin/Waterbody	Location	County	Index No.	Date	NCIBI Score	NCIBI Rating
04-03-01						
West Fk French Broad R	SR 1309	Transylvania	6-2-(7.5)	10/23/97	---	Not Rated
Little R	SR 1533	Transylvania	6-38-(20)	06/03/02	40	Good-Fair
				10/23/97	46	Good-Fair
Crab Cr	SR 1532	Transylvania	6-38-23	06/03/02	50	Good
04-03-02						
Mud Cr	SR 1647	Henderson	6-55	06/04/02	22	Poor
				09/16/97	20	Poor
Bat Fork	SR 1779	Henderson	6-55-8-1	06/04/02	14	Poor
				09/16/97	24	Poor
Clear Cr	SR 1587	Henderson	6-55-11-(1)	10/02/01	44	Good-Fair
Clear Cr	SR 1586	Henderson	6-55-11-(1)	10/02/01	36	Fair
Clear Cr	SR 1513	Henderson	6-55-11-(5)	10/02/01	44	Good-Fair
Cane Cr	US 25	Henderson	6-57-5	06/04/02	50	Good
				09/16/97	46	Good-Fair
Hominy Cr	NC 151	Buncombe	6-76	09/24/02	40	Good-Fair
				09/17/97	50	Good
South Hominy Cr	NC 151/SR 3449	Buncombe	6-76-5	09/23/02	50	Good
				04/09/97	48	Good
Swannanoa R	SR 2435	Buncombe	6-78	06/18/02	48	Good
				09/19/97	40	Good-Fair
Swannanoa R	US 25	Buncombe	6-78	06/28/93	32	Poor
Beetree Cr	SR 2427	Buncombe	6-78-15-(6)	06/25/97	32	Poor
Newfound Cr	SR 1641	Buncombe	6-84	06/17/02	48	Good
				04/09/97	28	Poor
Reems Cr	NC 251	Buncombe	6-87-(10)	06/18/02	50	Good
				09/17/97	52	Good
				11/17/93	44	Good-Fair
Flat Cr	SR 1742	Buncombe	6-88	06/18/02	50	Good
				04/10/97	56	Good
Sandymush Cr	SR 1107	Madison	6-92-(9)	06/19/02	48	Good
				09/17/97	50	Good
				11/16/93	50	Good
Turkey Cr	SR 1629	Buncombe	6-92-13	06/17/02	48	Good
04-03-03						
Boylston Cr	SR 1314	Henderson	6-52-(6.5)	06/04/02	52	Good
				09/15/97	56	Good
Mills R	SR 1337	Henderson	6-54-(1)	09/15/97	58	Excellent
				10/19/94	---	Not Rated
				06/29/93	---	Not Rated
04-03-04						
(Big) Ivy Cr	SR 2150	Buncombe	6-96-(0.5)	06/18/02	60	Excellent
				09/18/97	58	Excellent
				11/17/93	60	Excellent
Ivy R	US 25/70	Madison	6-96-(11.7)	11/16/93	52	Good
Bull Cr	SR 1574	Madison	6-96-16	06/19/02	40	Good-Fair
Big Laurel Cr	NC 208	Madison	6-112	09/18/97	46	Good-Fair
Shelton Laurel Cr	NC 208/212	Madison	6-112-26	06/20/02	58	Excellent
				06/03/97	58	Excellent
Little Laurel Cr	NC 208	Madison	6-112-26-13	05/04/99	58	Excellent
				09/29/98	60	Excellent
04-03-05						
Richland Cr	SR 1160/1168	Haywood	5-16-(1)	07/17/01	---	Not Rated
Richland Cr	Bus US 23	Haywood	5-16-(1)	07/17/01	---	Not Rated
Richland Cr	Boyd Ave	Haywood	5-16-(1)	07/17/01	28	Poor

Subbasin/Waterbody	Location	County	Index No.	Date	NCIBI Score	NCIBI Rating
Richland Cr	SR 1184	Haywood	5-16-(1)	07/17/01	28	Poor
Richland Cr	Walnut Trail Rd	Haywood	5-16-(16)	09/24/02	32	Poor
				10/22/97	38	Fair
Winchester Cr	off SR 1157	Haywood	5-16-3	07/18/01	---	Not Rated
Hyatt Cr	SR 1165	Haywood	5-16-6	07/18/01	---	Not Rated
Cherry Cove Cr	above reservoir	Haywood	5-16-7-2	07/19/01	---	Not Rated
Shiny Cr	above reservoir	Haywood	5-16-7-3	07/19/01	---	Not Rated
Old Bald Cr	above reservoir	Haywood	5-16-7-6	07/19/01	---	Not Rated
Rocky Br	SR 1147 & 1219	Haywood	5-16-7-9-(2)	07/18/01	---	Not Rated
Medford Br	off SR 1140	Haywood	5-16-8-1	07/18/01	---	Not Rated
Farmer Br	Brown & Georgia Ave	Haywood	5-16-11	07/18/01	---	Not Rated
Shelton Br	Marshall St	Haywood	5-16-13	07/16/01	---	Not Rated
Raccoon Cr	Bus US 23	Haywood	5-16-14	07/16/01	34	Fair
Factory Br	US 19	Haywood	5-16-15	07/16/01	---	Not Rated
Crabtree Cr	NC 209	Haywood	5-22	09/24/02	40	Good-Fair
				06/03/97	28	Poor
Jonathan Cr	US 276	Haywood	5-26-(7)	10/22/97	46	Good-Fair
				11/16/93	48	Good
Fines Cr	SR 1355	Haywood	5-32	09/24/02	38	Fair
				10/22/97	34	Fair
04-03-06						
North Toe R	SR 1121	Avery	7-2-(0.5)	06/23/97	46	Good-Fair
Big Crabtree Cr	SR 1002	Mitchell	7-2-48	05/04/99	58	Excellent
				09/30/98	58	Excellent
				06/24/97	58	Excellent
Cane Cr	SR 1211	Mitchell	7-2-59	06/24/97	34	Fair
Jacks Cr	SR 1337	Yancey	7-2-63	06/21/02	38	Fair
				10/20/97	34	Fair
Big Rock Cr	NC 226	Mitchell	7-2-64	09/30/98	50	Good
Pigeonroost Cr	SR 1349/NC 197	Mitchell	7-2-69	06/21/02	58	Excellent
				10/20/97	60	Excellent
04-03-07						
Price Cr	SR 1126/1136	Yancey	7-3-21	06/20/02	52	Good
				10/21/97	46	Good-Fair
Bald Mountain Cr	SR 1408	Yancey	7-3-32	10/21/97	---	Not Rated